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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LUGO, DAVID B

ART UNIT PAPER NUMBER

2634

DATE MAILED: 05/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/204,370

Applicant(s)

ATARIUS ET AL.

Examiner

David B. Lugo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☒ Claim(s) 7, 25 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 1998 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. With regards to the Information Disclosure Statement filed August 31, 1999, the Examiner has considered document EP 0 858 175 and has revised Form PTO-1449, enclosed herewith, accordingly. The objections made to the drawings in prior Office Action dated November 7, 2001 are withdrawn as the Applicant has satisfactorily addressed all issues raised by the Examiner, with the exception of a minor informality stated below. The objections made to the specification in the prior Office Action are withdrawn as the Applicant has made the necessary corrections requested by the Examiner. The objections made to claims 1-13, 15, 20, and 21 regarding the variables referenced in claims 1, 2, 15, and 20 and regarding various typographical errors contained in claims 2, 3, and 7 have been withdrawn as the Applicant has satisfactorily addressed all issues raised by the Examiner. The objection made to claim 25 is maintained as discussed below. The rejections made to claims 5-7 under 35 USC § 112, first paragraph are withdrawn as the Applicant has satisfactorily addressed all issues raised by the Examiner. The rejections made to claims 1-13 under 35 USC § 112, second paragraph are withdrawn as the Applicant has made the necessary corrections requested by the Examiner.
2. Applicant's arguments with respect to claims 1-4 and 8-25, rejected under 35 USC § 102 and 103, have been considered but are moot in view of the new ground(s) of rejection.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 333 (Fig. 3).

Claim Objections

4. Claim 7 is objected to because it is dependent on claim 1 in the clean version of the amendment, but dependent on claim 5 in the marked-up version. Appropriate correction is required. The Examiner is considering claim 7 to be dependent on claim 5, as originally filed.

5. Claims 25 and 30 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The step of updating the second set of paths *while updating* the first set of paths does not further limit the step of updating the second set of paths *without updating* the first set of paths, as recited in parent claims 23 and 28, respectively. In order for claims 25 and 30 to further limit claims 23 and 28, respectively, they must further perform a step that includes updating the second set of paths *while updating* the first set of paths. The step of updating the second set of paths *without* updating the first set of paths is exclusive from the step recited in claims 23 and 28, and therefore does not perform that step, as it must, in order to further limit the respective claims. The steps are therefore performed alternatively (i.e. not at the same time). The Applicant admits as much in the third paragraph of page 7 of the amendment filed March 4, 2002, as the searcher is said to occasionally perform an update function, during such times the selector may be active, *or at other times*, may be inactive.

The Examiner suggests that claims 25 and 30 be revised to be dependent on claims 22 and 27, respectively, and recite the step of updating the second set of paths while, at times, updating the first set of paths at times, and at other times, without updating the first set of paths.

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-7, 14, 15, 19-22, 24, 26, 27, 29, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Kondo U.S. Patent 6,222,834.

Regarding claims 1, 14, 19, 22, and 27, Kondo discloses, in Fig. 1, an apparatus for configuring a RAKE receiver comprising a searcher section 120 that obtains a plurality of search paths from the correlation peaks detected in a search range, a tracking section 130 that receives the demodulated signal and obtains the correlation level of each path, and a correlation demodulation path selection section 160 that designates a subset of paths to be subjected to correlation demodulation rake synthesis in a rake section 140 (see col. 3 line 1 to col. 4 line 27).

Regarding claims 2, 15, 20, and 21, the searcher section 120 uses an input signal to find a plurality of search paths comprising M paths, and the tracking section obtains the correlation level of each tracking path, thus performing $k \cdot M$ correlations (where k is considered equal to one) to obtain the correlation level of each path and generate estimates to be used to find the subset of the candidate paths.

Regarding claims 3 and 4, the searcher section 120 uses an input signal to find a plurality of search paths comprising M paths (where M is considered equal to one). The searcher section is described in column 4 lines 31-44 as detecting a first search path, a second search path, a third search path, etc. The tracking section obtains the correlation level of each path, thus performing $3 \cdot M$ correlations to obtain the correlation level of each path and generate estimates comprising M estimates to be used to find the second set of paths.

Regarding claims 5-7, the tracking section uses the input signal and the previously generated candidate paths in the selection or derivation of new candidate paths designated by correlation demodulation path selection section for rake synthesis.

Regarding claims 24 and 29, the tracking section 120 and the correlation demodulation selection section 160 are considered to be active generating new subsets of paths while the searcher section is actively generating new sets of candidate paths.

Regarding claims 26 and 31, Kondo discloses a tracking section 130 for tracking the candidate paths.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 8, 10, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo in view of Tran U.S. Patent 6,269,075.

Regarding claims 8 and 16, Kondo discloses an apparatus for configuring a RAKE receiver where searcher section 120 uses the correlation peaks from the correlation of the demodulated signal and a spread code.

Kondo does not expressly state that the output of a matched filter is used in the generation of a set of candidate paths.

Tran discloses a matched filter in Fig. 1, the output of which is provided to a searcher.

It would have been obvious to one of ordinary skill in the art to use a matched filter as disclosed by Tran in the apparatus of Kondo because the matched filter helps reject out-of-band interference and noise.

Regarding claims 10 and 18, the tracking section 120 and the correlation demodulation selection section 160 are considered to be active generating new subsets of paths while the searcher section is actively generating new sets of candidate paths.

10. Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo in view of Tran as applied to claims 8 and 16 above, and further in view of Pombo et al.

Kondo and Tran disclose all of the limitations of claims 9 and 17, except that the searcher may be inactive, thereby not generating candidate paths.

Pombo teaches a searcher that may be set to a low-power mode when not searching, as stated in column 5 lines 38-42.

It would have been obvious to one of ordinary skill in the art to use the teaching of deactivating a searcher as taught by Pombo in the RAKE receiver of Kondo-Tran in order to minimize power consumption as stated by Pombo in column 1 lines 33-42.

11. Claims 11-13, 23, 25, 28, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo in view of Pombo et al. U.S. Patent 5,799,256.

Regarding claims 11, Kondo discloses an apparatus for configuring a RAKE receiver as discussed above.

Kondo does not disclose that the apparatus further comprises a quality signal, such that a new set of candidate paths are generated when the quality signal is less than a threshold value.

Pombo discloses a radio receiver comprising a quality signal (RSSI) in column 2 lines 9-14, such that when the quality of a received signal falls below a threshold value, a signal with a higher quality signal is used.

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It would have been obvious to one of ordinary skill in the art to use the teaching of a quality signal as disclosed by Pombo in the apparatus of Kondo so a new search can be made when the quality signal falls below a threshold value, in order for signal with the highest quality to be processed.

Regarding claim 12, the RAKE receiver will continue to use the subset of the candidate paths until new candidate paths are obtained.

Regarding claim 13, Kondo does not expressly disclose the use of a counter where a new set of candidate paths are generated when the counter is greater than a pre-set value.

Pombo discloses the setting of a search period to a pre-set amount of time, above which a new search is performed (see column 10 lines 7-30).

It would have been obvious to one of ordinary skill in the art to employ the teaching of setting a search period to a pre-set amount of time as taught by Pombo in the receiver of Kondo so a search can be done as frequently as needed for accurate operation.

Regarding claims 23 and 28, Kondo discloses a method for configuring a RAKE receiver comprising searching a first set of paths to generate a set of correlation values, and selecting a second set of paths based on the correlation values.

Kondo does not expressly disclose that the searcher may be inactive, thereby not generating candidate paths.

Pombo teaches a searcher that may be set to a low-power mode when not searching, as stated in column 5 lines 38-42.

It would have been obvious to one of ordinary skill in the art to use the teaching of deactivating a searcher as disclosed by Pombo in the RAKE receiver of Kondo in order to minimize power consumption as stated by Pombo in column 1 lines 33-42.

Regarding claims 25 and 30, the tracking section 120 and the correlation demodulation selection section 160 are considered to be active generating new subsets of paths while the searcher section is actively generating new sets of candidate paths.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(703) 305-0954**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231


or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

5/16/02


STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

David B. Lugo
Patent Examiner